

PTO/SB/08A (08-03)

Approved for use through 07/31/2006. OMB 0651-0031
 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 2

Complete if Known

Application Number	10/766,801
Filing Date	27 January 2004
First Named Inventor	Ron McCallister
Art Unit	
Examiner Name	

Attorney Docket Number 2298-030

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (<i>if known</i>)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
dx/s	US- 2003/0227981	12/11/2003	Vella-Coleiro, et al		
	US- 2003/0076894	04/24/2003	Jin, et al.		
	US- 2002/0180523	12/05/2002	Okubo, et al.		
	US- 2004/0021517	02/05/2004	Irvine, et al.		
	US- 2004/0013206	01/22/2004	Gamm, et al.		
	US- 2003/0020538	01/30/2003	Kim		
	US- 5,760,646	06/02/1998	Belcher, et al.		
NC/B	US- 6,118,335	09/12/2000	Nielsen, et al.		
	US- 5,923,712	07/13/1999	Leyendecker, et al.		
	US-				

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ -Number ⁴ -Kind Code ⁵ (<i>if known</i>)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶

Examiner Signature

Date Considered

5/12/05

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

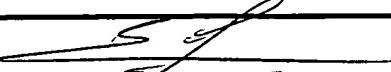
This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO				<i>Complete if Known</i>	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Application Number	10/766,801
				Filing Date	27 January 2004
				First Named Inventor	Ron D. McCallister
				Art Unit	
				Examiner Name	
Sheet	2	of	2	Attorney Docket Number	2298-030

NON PATENT LITERATURE DOCUMENTS						
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.				T ²
oxj/s		GLENTIS, KOUKOULAS, & KALOUPTSIDIS "Efficient Algorithms for Volterra System Identification" IEEE Transactions on Signal Processing, Vol 47, No. 11, Nov 1999.				
11		DING, RAICH, & ZHOU "A Hammerstein Predistortion Linearization Design Based on the Indirect Learning Architecture" Georgia Inst. of Tech. School of Elect. & Comp. Engineering.				
		RAZZAGHI & CHANG "A 10-b,1GSample/s ADC using SiGe BiCMOS Technology" Electrical Engineering Department, UCLA.				
		DANESHRAD "DSP VLSI Engine for Electronic Linearization of Fiber Optic Links" Wireless Integrated Systems Research Group, UCLA, 02/27/2001.				
		FOX "Analysis and Dynamic Range Enhancement of the Analog-to-Digital Interface in Multimode Radio Receivers" Virginia Polytechnic Inst. & State Univ. 02/1997.				
dx/s		HUMMELS "Linearization of ADCS and DACS for All-Digital Wide-Bandwidth Receivers" Depart. of Electrical & Comp. Engineering, Univ. of Maine, 09/09/1999.				

Examiner Signature		Date Considered	5/12/05
--------------------	---	-----------------	---------

*EXAMINER: Initial if reference considered whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

Complete if Known**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 1 of 3

Application Number	
Filing Date	
First Named Inventor	Ronald D McCallister
Art Unit	
Examiner Name	

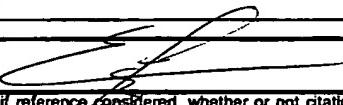
Attorney Docket Number 2298-030

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
AJH		US- 5,778,029	07/07/1998	Kaufmann	
		US- 6,282,247	08/28/2001	Shen	
		US- 6,222,878	04/24/2001	McCallister, et al.	
		US- 6,512,800	01/28/2003	Amir, et al.	
		US- 2002/0193078A1	12/19/2002	Shearer, III, et al.	
		US- 5,721,756	02/24/1998	Liebetreu, et al.	
		US- 5,949,832	09/07/1999	Liebetreu, et al.	
		US- 6,442,217	08/27/2002	Cochran	
		US- 5,049,832	09/17/1991	Cavers	
		US- 2003/0063683A1	04/03/2003	Shearer, III, et al.	
		US- 2003/0063682A1	04/03/2003	Shearer, III	
		US- 6,141,390	10/31/2000	Cova	
		US- 5,867,065	02/02/1999	Leyendecker	
		US- 5,732,333	03/24/1998	Cox, et al.	
		US- 2003/0146787A1	08/07/2003	Hedberg, et al.	
		US- 2003/0156658A1	08/21/2003	Dartois	
		US- 2003/0123568A1	07/03/2003	Ophir, et al.	
AJH		US- 2003/0179831A1	09/25/2003	Gupta, et al.	
AKS		US- 2001/0005402A1	06/28/2001	Nagatani, et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁴
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				

Examiner Signature		Date Considered	5/2/2022
--------------------	---	-----------------	----------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

Complete if Known**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 2of 3

Application Number	
Filing Date	
First Named Inventor	Ronald D McCallister
Art Unit	
Examiner Name	

Attorney Docket Number 2298-030**U. S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. ¹	Document Number <small>Number-Kind Code² (if known)</small>	Publication Date <small>MM-DD-YYYY</small>	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
<i>JKS</i>		US- 5,113,414	05/12/1992	Karam, et al.	
<i>M</i>		US- 2002/0064236A1	05/30/2002	Matsucka, et al.	
		US- 6,240,278	05/29/2001	Midya, et al.	
		US- 6,236,837	05/22/2001	Midya	
		US- 4,910,698	03/20/1990	McCartney	
		US- 4,902,979	02/24/1990	Puckette, IV	
		US- 5,454,007	09/26/1995	Dutta	
		US- 4,888,557	12/19/1989	Puckette, IV, et al.	
		US- 4,878,029	10/31/1989	Saulnier, et al.	
		US- 4,270,179	05/26/1981	Sifford, et al.	
		US- 4,290,139	09/15/1981	Walsh	
		US- 4,422,175	12/20/1983	Bingham, et al.	
<i>J</i>		US- 4,633,482	12/30/1989	Sari	
<i>JKS</i>		US- 4,053,837	10/11/1977	Ryan, et al.	
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document <small>Country Code³-Number⁴-Kind Code⁵ (if known)</small>	Publication Date <small>MM-DD-YYYY</small>	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶

Examiner Signature

Date Considered

5/12/03

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO				Complete if Known	
				Application Number	
				Filing Date	
				First Named Inventor	Ronald D McCallister
				Art Unit	
				Examiner Name	
Sheet	3	of	3	Attorney Docket Number	2298-030

NON PATENT LITERATURE DOCUMENTS						
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.				T ²
<i>rd/s</i>		CAVERS, "The Effect of Quadrature Modulator and Demodulator Errors on Adaptive Digital Predistorters for Amplifier Linearization" IEEE Trans on Veh Tech, Vol46, #2, 05/97.				
<i>1</i>		DING & ZHOU, "Effects of Even-order Nonlinear Terms on Power Amplifier Modeling and Predistortion Linearization" IEEE Transactions on Vehicular Technology, 08/2002				
		GRASS, BODHISATYA & MAHARATNA, "A Dual-Mode Synchronous/Asynchronous CORDIC Processor" IHP, IM Technologiepark, 2002.				
		OHLSSON, "Studies on Implementation of Digital Filters With High Throughput and Low Power Consumption" Institute of Technology, Dept of Electrical Engineering, P 61-73, 06/03.				
		RAICH, QIAN & ZHOU, "Digital Baseband Predistortion of Nonlinear Power Amplifiers Using Orthogonal Polynomials" Proc. ICASSP 2003) p689-692, Hong Kong China 04/2003.				
		GODAVARTI "Multiple Antennas in Wireless Communications" Array Signal Processing and Channel Capacity" University of Michigan, P 16-52, 2001.				
		"Pact Application Note: Adaptive Filter Based on the LMS-Algorithm"				
<i>V</i>		CHOO "Mapping LMS Adaptive Filter IP Core to Multiplier-Array FPGA Architecture for High Channel-Density VOIP Line Echo Cancellation" CMP United Business Media, 2003.				
<i>rd/s</i>		WIDROW, MCCOOL & BALL, "The Complex LMS Algorithm" Information Systems Laboratory, Naval Undersea Center, Fleet Engineering Dept, 08/19/1974.				

Examiner Signature	<i>S</i>	Date Considered	<i>5/26/05</i>
--------------------	----------	-----------------	----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.88. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.